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FINAL REPORT
Business Services: Their Role and Importance to the Alberta Economy

Prepared for

Alberta Economic Development and Trade
and
Alberta Career Development and Employment

by

Nichols Applied Management
Economic and Management Consultants
Edmonton, Alberta

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EXECUTIVE SUMMARY

- This study is intended to further our understanding of the service sector, a dominant and expanding part of the Alberta economy. The evolution toward a service-oriented economy has been underway for many years, but the accompanying structural change -- and its implications -- remain widely misunderstood and debated.

- The study focuses on a particularly significant and dynamic component of the service sector -- the business services industries. Included among these industries are engineering, computer, and legal services and other intermediate services such as transportation, communication, financial services, and support services to the agriculture, forestry, and oil and gas industries. These industries provide services that primarily are purchased by other goods- and services-producing businesses rather than by private individuals and households, and play a crucial role in the future growth, competitiveness, and productivity of the provincial economy.

- The growth of the service sector generally -- and business services more specifically -- is now widely acknowledged and documented. Since 1940, the share of Alberta's employment in service activities has increased from one quarter to more than 70%. Business services, broadly defined, have grown more rapidly than the sector as a whole and account now for one-fifth of total services employment and roughly 15% of all employment.

- The rapid growth of the business services industries derives in substantial part from the increasing importance of knowledge capital as an input to the production of goods and services and from the growing functional specialization in our economy.

- Business services, sometimes known as "intermediate" services, are tied to other goods-producing and service firms through an interdependent web of supplier and customer relationships.

- Many business services firms in the province have direct or indirect ties to the goods-producing resource and manufacturing sectors, and indeed, some of the unique fields of service expertise that we have are associated with the traditional importance of agriculture, oil and gas, and other resource sectors in Alberta's economy. However, contrary to the view -- still widely held -- that our service industries are a derivative of, and dependent on, the goods-producing sector, the relationship is very much an interdependent and mutually beneficial one.

- Perhaps the most important strategic implication to the province of the business services industries stems from the integral role that these services play in enhancing the productivity and competitiveness of the province's goods-producing resource and manufacturing industries. Business services function both as a "lubricant" and a "stimulant" to those industries. They assist goods-producing firms to develop new and better products, to identify and penetrate markets, to reduce their costs of operation, to improve the quality of their outputs, to build and finance new and more efficient facilities and equipment, to respond more quickly to the needs of the marketplace, to raise the capabilities of their workers, and to improve their business management practices . Business services are inextricably linked to the success of the province's goods-producing sector.

- An overwhelmingly large share of the revenues generated by the business services industries accrue from the Alberta market. However, global services trade, which now exceeds $600 billion annually, is expanding rapidly and Alberta service firms are involved to varying degrees in the export market. Service exports offer a number of potential strategic benefits to the province, including the diversification and expansion of our markets, the inward transfer of technology and information, the development of new international networks, and the contribution these make to the subsequent sales of other services and goods. In the context of the increasing globalization trends, it is becoming increasingly important that Alberta service firms look toward viable market opportunities outside the province.

- There are several basic forms in which services can be sold in foreign markets. These include the direct sale of services, the sale of services in association with goods, the indirect sale of services as inputs embodied in exported goods, and the sale of technology through contractual licensing arrangements. In addition to these formal export avenues, there has been an increasing tendency toward the foreign delivery of services through overseas business establishments and collaborative ventures.

- The rapid growth of the business services industries has not insulated them from competitive forces. On the contrary, the rapidity of change in technology and in our knowledge base has, in combination with other economic factors, intensified the level of inter-company competition in several industries such as engineering consulting. This has had various impacts, including: an increased emphasis on service quality; an accelerated delivery turnaround of services; an expanded awareness of the need for innovation, imagination, and new approaches in providing services; greater price competition; an increased sales and marketing orientation of service providers; a greater attention to the range and mix of services offered and to the tailoring of services to the needs of customers; and an accelerated search for strategic alliances and associations with other businesses organizations.

- Many of the business services industries -- particularly in the professional services area -- are characterized by the generally high levels of education and training of their personnel. Indeed, the future development of business services in the province will be driven in large part by the quality, productivity, and innovation of the human capital attracted to these industries.

- The strong ties that exist among service firms and with goods producers tend to encourage business services to locate in relative proximity to one another. Business establishments are also inclined to be close to other organizations for information exchange through business networks and personal contacts. As well, many of the highly educated and skilled people required by business services firms are attracted to the amenities offered by the larger urban centres. For these reasons, the business services sector has a strong urban concentration.

- Alberta's business services industries will have an important strategic role in the long-term growth and diversification of the province and in its evolution to a more advanced stage of development. The extent to which the sector achieves that role will depend on the responses to the following key issues affecting the sector:

  1. the need to improve productivity and quality in the business services field;

  2. the need to increase the province's exports of services;

  3. the need for a strong and continuing commitment to quality education at the primary, secondary, and post-secondary levels and for the accelerated provision of adult training, education, and upgrading throughout the course of an employee's working life;

  4. the need to maintain the kind of quality-of-life services that encourage highly skilled and entrepreneurial people to choose to live in the province;

  5. the need to maintain an efficient and modern public infrastructure that is supportive of modern business operations; and

  6. the need to ensure a policy and program framework that is sensitive to the needs of the business services industries.

- The movement toward a globalization of markets and toward an increasingly competitive domestic and international environment will simultaneously create both market opportunities and new competitive pressures on the province's business services industries. It is important from the standpoint of Alberta's long-term economic growth and diversification that this important sector of the economy remain innovative, competitive, outward-looking and dynamic.

1. INTRODUCTION

Over the past several decades, the economies of the more advanced and industrialized countries of the world have been significantly transformed. Dominated at one time by the physical production of agricultural products, natural resources, and manufactured goods, the most industrialized economies today are heavily oriented toward service activities. Services in Canada now account for roughly two-thirds of total economic activity.

The evolution toward a service-based economy has been underway for many years, but it has only recently received the recognition and attention its size and importance deserves. The reasons for this structural change -- and its consequences and implications -- remain widely misunderstood and debated.

The Province of Alberta, whose strength has traditionally been associated with agriculture, oil and gas, petrochemicals, and other resource-based industries, has not been untouched by the global trend toward a service economy. Services now account for 60% of provincial output and more than 70% of employment.

The recognition of the importance of services to Alberta has been reflected in recent years by a variety of research, organizational, program, and policy initiatives. These have attempted to redress the previous inattention to the sector and, in some instances, to remove inadvertent development biases toward the service industries vis-a-vis the more traditional goods-producing and resource sectors.

The purpose of this study is to continue the process of broadening our understanding of the role, importance, and strategic implications of what is now the largest part of our economy. The report focuses on a particularly significant component of the service sector -- the business services industries. Business services are those that are primarily purchased by other goods- and services- producing businesses rather than by individuals and households. These industries, sometimes known as "intermediate" or "producer" services, have grown rapidly in recent years and have a particularly crucial role to play in the future growth, competitiveness and productivity of the provincial economy.

In this report, business services include, in addition to those professional services such as consulting engineering, computer, and legal services which are included in most formal definitions, other intermediate services such as transportation, communications, financial services, and services to the agriculture, forestry and oil and gas industries.

2. AN OVERVIEW OF ALBERTA'S BUSINESS SERVICES

2.1 PREFACE

A discussion of Alberta's business services should begin with the recognition that they embrace a wide spectrum of quite different activities, ranging from practitioner services in law and accounting to very 'arge and capital-intensive telecommunications and transportation organizations. This diversity makes it difficult to form generalizations that can be applied universally to the many types of businesses that constitute the sector.

The statistical data are not generally available to make formal inter-industry comparisons, but it is clear that the various business services that make up the sector can differ quite dramatically in terms of their rates of growth, levels of industry concentration, changes in productivity, capital intensity, competitiveness, volatility, labour force patterns, and in their propensity to apply and adopt new technology. As a result, the extent to which the business services industries should be viewed as a single and homogeneous sector must remain limited.

There is a natural tendency toward categorizing industry activities according to formally defined parameters and criteria. And, indeed, some level of categorization is often necessary for statistical data gathering and analysis. However, industry definitions are often imprecise and industry-specific data are frequently deficient. There appears as well to be an increased overlap among the various business services industries as new types of services evolve and as firms that nominally are included in one industry category broaden their range of services to include those defined in another.

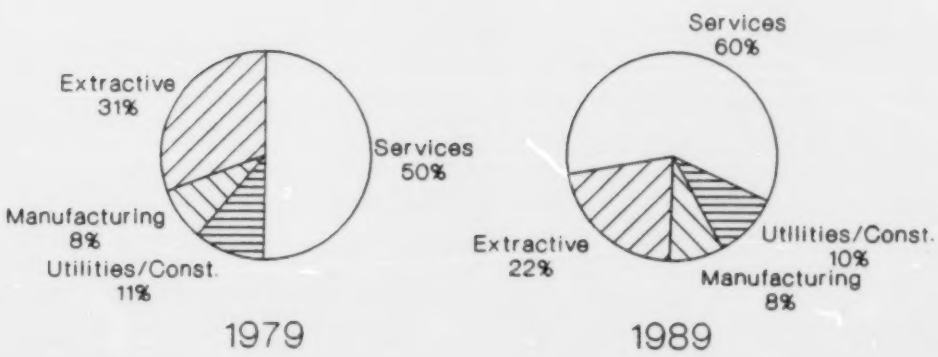
Thus we find, for example, engineering firms with management consulting divisions, law firms and accounting firms providing tax and business advice, and advertising, management consulting, and market research organizations offering services in market analysis. As another example, only an estimated 15% of the revenues from software development in Canada is generated by firms whose primary business is defined to be software development. The balance accrues to firms in other industries, including manufacturing. In summary, formal industry

classifications tend to overstate the preciseness with which various industrial activities can be defined, and this important point should be borne in mind by the reader.

2.2 INDUSTRY SIZE AND GROWTH

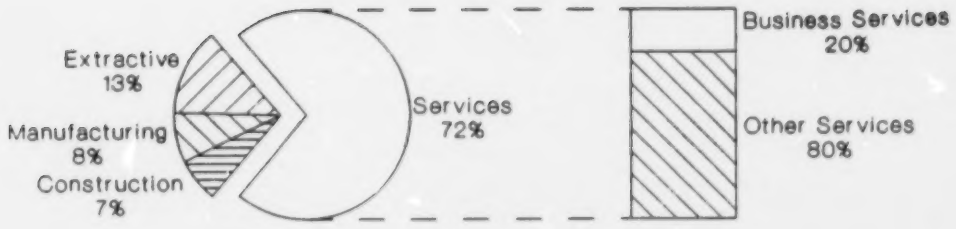
The size and growing importance of the service sector in the provincial economy is illustrated in Figure 1, which shows that over the ten-year period 1979 to 1989, the share of total output generated by all service industries increased from 50% to 60%. During the same decade, the primary industries such as agriculture and oil and gas accounted for a declining share of the provincial economy. These changes are consistent with longer-term trends. It is also striking to note that since 1940, the share of Alberta's employment in service activities has increased from one-quarter to more than 70% today. During the same period, employment in the primary industries fell from two-thirds of the total to only about one-seventh.

FIGURE 1
Sectoral Contribution to Provincial Output



Business services, of course, comprise only a part of the overall service sector. They exclude, for example, the wholesale and retail trade industries, personal services, health and education services, and public administration functions. Figure 2 shows that business services, broadly defined, account in Alberta for one-fifth of total services employment and roughly 15 percent of all employment.

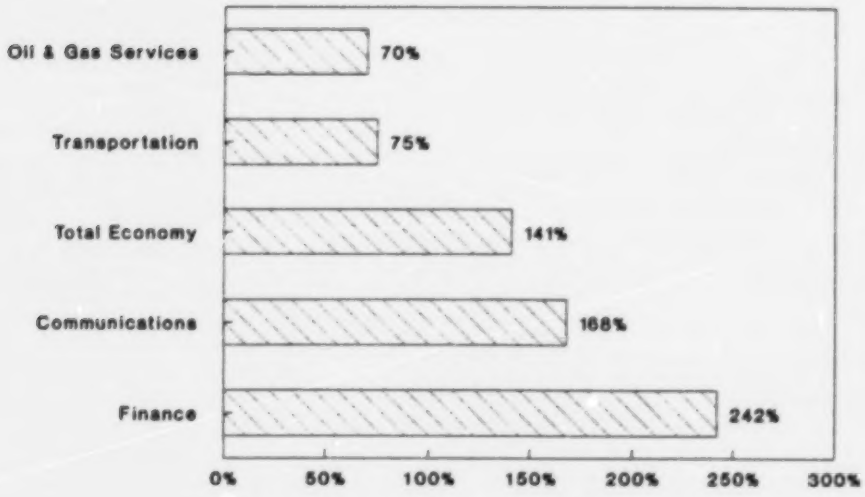
FIGURE 2
Distribution of Employment
Alberta, 1990



A number of business services industries have been among the fastest-growing components of the service sector, which itself is the most rapidly expanding part of the provincial economy. Business services comprise a host of quite different industries and the underlying differences among them can be masked by combining them together in a common "pool". Figure 3 shows the relative employment growth of particular business services and of the provincial economy as a whole over the past three decades. It is clear, for example, that while such services as computer services, accounting, engineering, and law and the financial and communications industries have grown particularly rapidly, other business services industries, including transportation and services to the oil and gas industry, have grown much more slowly.

The trend in Alberta toward a service-based economy has been a continuing one for several decades and shows no sign of abatement. The sections of the report that follow probe the reasons for that growth and discuss some of the underlying characteristics of the business services industries.

FIGURE 3
Growth in Employment, 1961-1990
Selected Business Services, Alberta



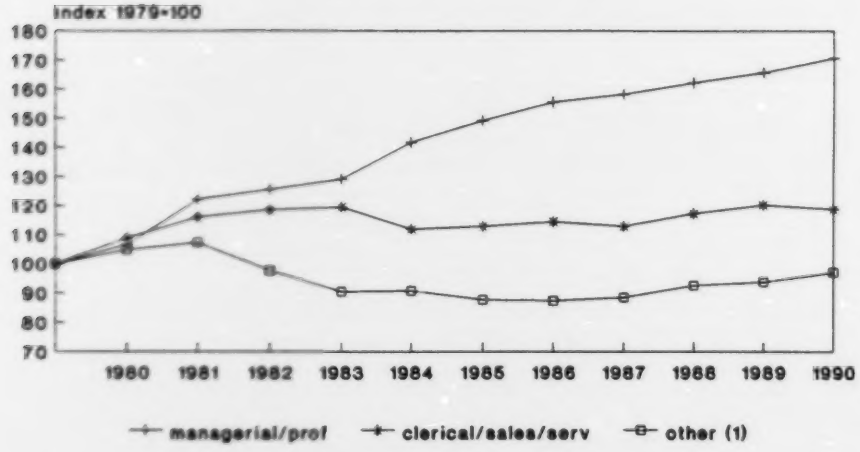
2.3 GROWTH FACTORS

We have seen that business services have assumed a large and growing share of the provincial economy. That growth has derived in large part from the increasing importance of knowledge and information as an essential -- and perhaps pre-eminent -- input into the production of goods and services. Knowledge capital is now widely seen to play a crucial role in industrial competitiveness. That role has been enhanced by advances in information processing and communication technologies which have dramatically simplified and accelerated the flow of financial, market, and operational information across countries and between continents. The explosion that is occurring in our technological and knowledge base has forced an increasing specialization of function in our economy and has meant that knowledge-based business services have grown at a disproportionately fast rate to the rest of the economy.

The knowledge-intensiveness of many business services is reflected in the high proportion of skilled, educated and innovative people they employ. These people are able to gather, assimilate, and apply the information and know-how that is now such an important element in the production system.

Figure 4 bears out the relationship between the growing service sector and the demand for a more highly trained work force. Over the past decade, the growth in employment for managerial and professional staff in the province has significantly exceeded that for clerical and sales staff and for what are essentially "blue collar" occupations in the primary, construction, manufacturing, transportation, and materials handling industries.

FIGURE 4
Employment by Occupation
Alberta, 1979-1990



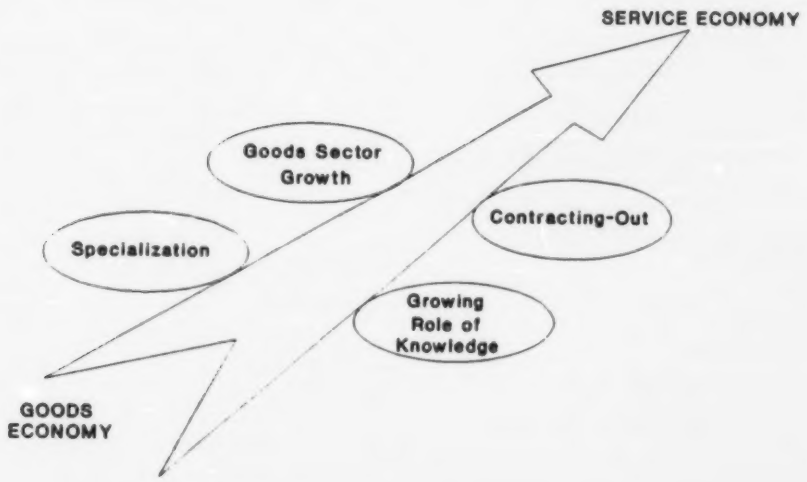
1 Includes primary occupations, processing, construction, materials handling, transportation, and related occupations

Several factors, depicted in Figure 5 and discussed below, influence the growth in business services.

Business services have naturally grown as the goods- and services-producing industries that rely on them for inputs have expanded. But perhaps an equally significant factor in the growth of business services has been the material and leading role these services have provided in raising the output of those other sectors of the economy by enhancing their productivity, assisting them to develop new products and services, and helping them to mobilize their comparative advantages.

Software development is one business service that clearly illustrates how services can spawn goods production. Beyond the obvious observation that computer hardware is only as good and as useful as the software programs and applications that control it and operate on it, software services have generated demands for specialized equipment ranging from bar code readers, to computer desks, to printers. There is more than a grain of truth in the statement that spreadsheet and word processing software precipitated the microcomputer revolution.

FIGURE 5
Business Services Growth Factors



An added but less important and fundamental reason for the growth of business services in Alberta -- and elsewhere -- has been the increasing tendency to contract-out services that were once internalized within organizations. Many businesses have found that specialized external services can provide more responsive, less costly, more impartial, or higher-quality services than can be delivered on an in-house basis.

For example, many banks and an increasing number of securities brokers have found that their data processing systems maintenance and development, back office operations and specialty processing, while operationally important, are not as critical to their competitiveness. Accordingly, they are starting to turn these operations over to independent service providers who can often do them more efficiently and cheaply. In a similar way, oil and gas companies in the province contract out much of their drilling requirements and rely extensively on

external firms for services as diverse as geophysical and geological consulting, oilfield engineering, legal and accounting services, and environmental consulting.

2.4 INDUSTRY CHARACTERISTICS

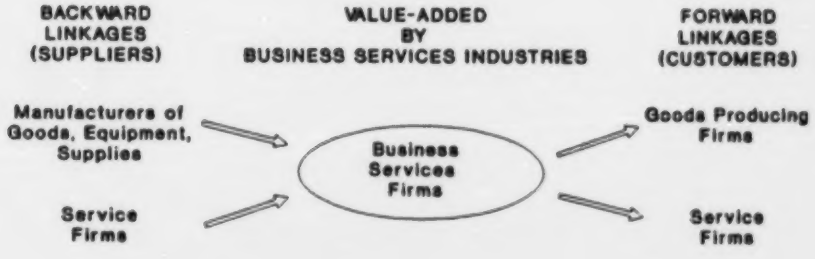
The business services sector is characterized by a number of broad features discussed in this section of the report. The discussion also identifies particular characteristics and orientations which differentiate the business services structure in Alberta from other regions.

2.4.1 Linkages to Other Sectors

A complex web of interrelationships connects the business services industries with other parts of the economy, and the pattern of these interconnections or linkages may vary substantially from firm to firm and from industry to industry. Business services rely on a host of suppliers to provide various inputs to them as part of their own value-added process. These ties to suppliers are known as "backward linkages". Similarly, the services provided by business services firms are often sold to a broad range of firms in different parts of the economy. These relationships with customer firms, and in some cases with private households, are sometimes termed "forward linkages".

The interdependencies which characterize our economy are clearly evident in the pattern of linkages between business services and other economic sectors. Figure 6 provides a simple illustration.

FIGURE 6
Business Services Linkages

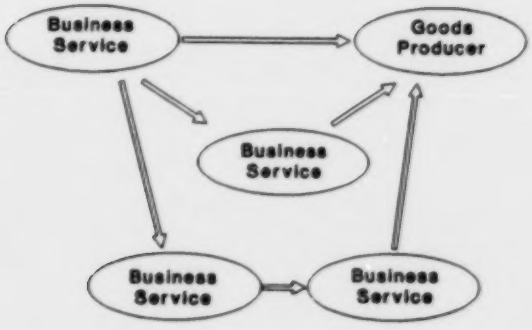


The dependency and vulnerability of business services on conditions in the domestic economy are dictated in large measure by the nature of these interconnections with other sectors of the economy. Firms which sell their services predominantly in foreign markets may be relatively unaffected by local economic conditions. Included in this category, for example, would be the software developer which sells virtually all its product and service outside of Alberta in the U.S. market. At the other end of the vulnerability spectrum are those businesses which provide specialized services to the agricultural, oil and gas, and other sectors of the provincial economy which may be dramatically affected by weather, public policy, resource prices, and other factors. Between those extremes would be service firms that are more or less diversified in terms of customer base, geographic markets, and service functions. An example might include a consulting engineering firm having a number of offices, each serving a different area, and providing services in design, engineering, and project management in diverse functional fields such as municipal, civil, and environmental engineering.

2.4.1.1 Ties to the Resource and Manufacturing Sectors

The linkages between business services industries and the goods-producing sector may be very strong and direct, indirect, or virtually non-existent, as illustrated in Figure 7. However, many business services in Alberta are directly or indirectly linked in some way to the province's resource and manufacturing sectors. These relationships are mutually reinforcing.

FIGURE 7
Linkages to the Goods-Producing Sector can be Direct or Indirect

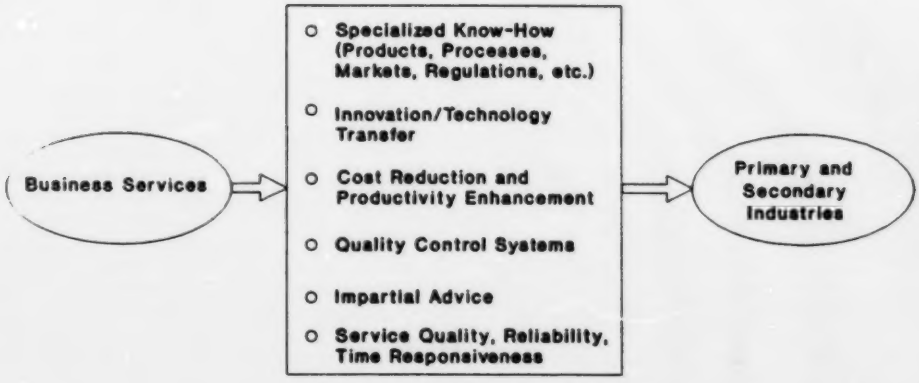


The traditional view -- held by many people -- that services are in some sense unproductive and quite detached from and subsidiary to the "real" business of producing goods is an inaccurate one.

That view of the economic system -- still widely held -- suggests that the existence of the services industries is a derivative of, and is dependent on, the goods-producing industries. During much of this century, this perception of the subsidiary importance of services has been paralleled by a corresponding economic preoccupation in much of the world with primary and secondary economic activities.

However, it is becoming more and more obvious that services -- and particularly business services -- have a very strong and interdependent relationship with the goods-producing industries. Indeed, business services are integral to the growth and performance of those industries. Figure 8 shows some of the key benefits that business services provide to the goods-producing industries.

FIGURE 8
Business Services Role in Goods Production



The resource and manufacturing industries in Alberta rely on business services for specialized and innovative know-how in various professional and technical areas, for the efficient transportation of products and transmission of business information and data, for the financing of their operations and investments, and for the prompt and cost-effective provision of professional support services essential to their operations.

Business services perform a key role in the development of new products and product markets for the primary and manufacturing industries and, more generally, in improving the productivity and competitiveness of those industries.

Some examples may help. In the oil and gas industry, which is so important to the provincial economy, consulting engineering firms provide specialized design, engineering, and project management services for the development of new pipelines and processing facilities, and other geotechnical firms advise oil companies on where to search for new reserves and how best to optimize the production of existing resources. A diverse array of oilfield service firms is available within the province to respond quickly and cost-effectively in drilling for oil and gas. Specialized legal professionals assist firms to satisfy regulatory requirements and reduce contractual risk. Environmental consultants monitor the biophysical impacts of facilities and design programs to minimize adverse impacts. All of these business services -- and many others -- are essential to the smooth operation and efficient performance of the petroleum industry. Indeed, no firm operating in the Alberta oil patch, not even the largest of the integrated oil companies, has the capability to implement exploration, drilling, development, and production programs without resort to many outside service providers.

In a similar way, forest management, environmental, transportation, and other business services provide valuable and essential inputs to the province's emerging and expanding forest products industry, while a host of veterinary, crop-dusting, animal breeding, agricultural management, and other services support the agricultural sector. For example, artificial insemination and, to a lesser extent, frozen embryo transplant processes are important purebred breeding techniques used in the domestic cattle industry and also form part of an export industry. The vial of semen or the frozen embryo that is sold abroad embodies significant know-how in documentation, collection, preservation, and handling techniques and these service-related activities constitute in a real sense much of the value-added of the product.

The province's manufacturing sector also relies extensively on the business services industries. Engineering consulting firms assist in the design and construction of manufacturing facilities and the development of quality control systems. Specialized companies provide hands-on training to the employees that must operate new or revamped manufacturing facilities, while computer consulting and software firms develop computer-based solutions for improving operations control and

management information. Employment services and executive search firms assist in recruiting the human resources needed to operate and manage the production plants. And venture capital companies and traditional lending organizations play an instrumental role in the financing of new facilities and expansions. Market research firms provide help in identifying new markets and developing market penetration strategies. Transportation companies enable manufacturers to deliver goods to distant markets efficiently and inexpensively. These networks of service businesses are crucial to the smooth and efficient functioning of the manufacturing sector.

These illustrations are intended to show only that there is a very strong, direct, and complementary relationship between business services and the goods-producing industries. More significantly, the relationships are of a two-way nature. Contrary to the myth that services are dependent on the goods industry, it is evident that services, and especially business services, are a critical element in creating a competitive business environment. Business services now constitute a significant element in the input costs of the primary and secondary goods-producing sectors and play a crucial role in enhancing the viability and efficiency of those industries.

Alberta's resource base has influenced the development of particular business services strengths in such areas as oilfield services, geophysical and geological consulting, oil and gas computer services and software, oil and gas transportation, facility design and engineering, cattle breeding, agricultural export marketing services, and so forth. The close ties between the province's resource industries and many business services also has the effect of making those services sensitive to upsurges and downturns in global market conditions and resource prices, and subjects those business services to some volatility and vulnerability.

At the same time, the relatively small size and resource-oriented industrial structure of the provincial economy implies that a variety of specialized and advanced business services may not have a significant presence in the province. For example, a small number of major international financial centres have evolved globally and in those centres a large and sophisticated network of associated business support services such as merchant banks, institutional brokerages, and investment houses have

evolved. Similarly, with many of the national consumer product companies in Canada headquartered in Ontario, that region has a large array of related business services in such fields as consumer research, product packaging and advertising which by comparison are under-represented in the Alberta economy.

2.4.1.2 Ties to Other Business Services

Alberta's business services firms have extensive relationships with one another and there is a massive and interconnected web of suppliers and customers within the sector.

Legal firms, to take one example, rely on computer systems, accounting, court reporting, and employment service firms for essential administrative support inputs, and they often retain outside expert witnesses and consultants in such areas as engineering, medicine, forensic accounting, and economics to assist them in litigation and regulatory work. The ultimate clients for this work may be private businesses, institutions, or public agencies representing virtually every sector of the economy.

In a similar way, educational services rely on suppliers of educational software and computers and in turn sell their services to businesses of all types and sizes in various industries. These backward and forward linkages among service firms may directly or indirectly lead to connections with the goods-producing industries. As mentioned before, a business service may be provided directly to a primary or secondary goods producer or to another service provider, who in turn provides a broader range or "package" of service inputs to a goods producer.

2.4.2 Service Exports

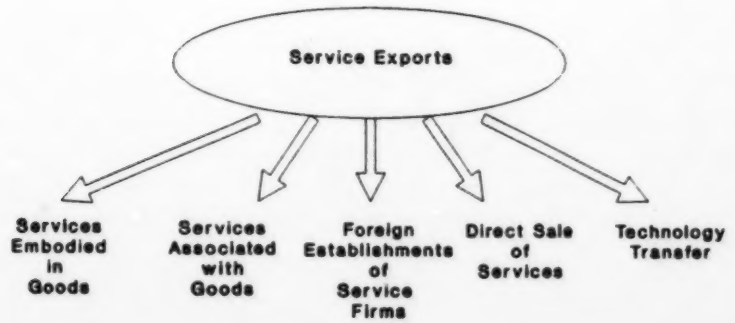
An overwhelmingly large share of the revenues generated by the business services industries accrues from sales within the Alberta market. This is not surprising -- the advantages of local market knowledge, proximity to local suppliers and customers, and networking relationships can provide significant competitive advantages to locally-based service providers. And, at the same time, there are a number of formal and informal impediments to international services trade.

Notwithstanding these qualifications, global services trade is large and receiving considerable attention in international trade negotiations.

Global services trade is also expanding quickly -- and certainly at a more rapid pace than is the volume of goods trade. The international trade in services already is estimated to exceed $600 billion annually.[1] An earlier survey of six selected business services industries in Alberta estimated that the exports of just those industries amount to $180 - $230 million annually.[2] The overall exportation of all business services is unquestionably much higher.

The estimation of service exports presents particular methodological and data gathering difficulties. Furthermore, the export estimates that are prepared normally include only the direct sale of services abroad while there are in fact several basic forms in which services can be sold in foreign markets, as shown in Figure 9, and discussed below. It is clear from the diversity of direct and indirect forms in which service exports can occur, that the business services industries have an important role in Alberta's overall export competitiveness.

FIGURE 9
Service Exports Occur in Different Forms



Services Embodied in Goods

A significant but unquantified exportation of Alberta services occurs in indirect form as a constituent or associated part of goods exports. For example, embodied in the coal that is shipped abroad by Alberta firms are rail transportation costs, investment financing costs, and expenditures for various types of legal, accounting, inspection, testing,

1. The Economist, May 5, 1990.
2. Export Survey of Selected Service Industries. Nichols Applied Management. Prepared for Alberta Economic Development and Trade and Alberta Career Development and Employment. March 1989.

engineering, geological, and drilling services. Computer consulting firms support head office and operational functions. International marketing itself involves extensive outlays for air transportation, customer-supplier telecommunications, and even the preparation of proposals supported by brochures, and audio-video packages. These various business services inputs represent essential and necessary elements in any goods exports and account, in the case of coal, for roughly 60% to 70% of the delivered cost of the product at the overseas destination. **Indeed, the foreign saleability of many goods appears to be increasingly dependent on the quality of the services embodied in those goods.**

Services Associated with Goods

Services are also often sold in conjunction or association with goods, as part of a package. In many instances, product sales must be accompanied by the provision for on-site set-up and installation, operational and maintenance training, and after-sales service, inspection, and technical support. Arrangements for insurance, financing, and transportation may also be necessary to finalize an export contract.

It has been estimated that in the case of the automobile industry the services associated with a car after the vehicle leaves the assembly line amounts to 35% of the final cost to the consumer. These services include distribution, warranty repairs, factory incentives, and advertising.[1] Additional service inputs, such as design and legal fees, would be included in the ex-factory cost of the car.

The services that are embodied in goods -- or sold together with them -- are becoming increasingly important factors in export sales success and this suggests the need to devote more attention toward improving the quality and competitiveness of those services.

Foreign Establishments of Service Firms

The global expansion of the service sector, and more specifically of the business services industries, has also been accompanied by an increasing tendency toward the foreign establishment of service businesses. In some instances, the need to be located within the foreign market area and the difficulty of effectively or efficiently delivering a service from a distant location requires a local presence. Examples here

1. J.D. Power and Associates, quoted in the Economist, April 27, 1991.

include the foreign operations or joint ventures of Alberta-based engineering, environmental service, and material testing firms. A number of successful technology companies that export to overseas markets have cited the need for "partnering" arrangements to effectively penetrate and serve those markets. The sales of overseas service establishments are not, of course, reflected in government trade statistics but for the parent company those overseas sales are nonetheless considered to represent an "export" revenue.

Direct Sale of Services

Some services, of course, can be exported directly, as for example when a lawyer or an engineering, computer, or management consultant provides professional services abroad to a foreign client. The use of Alberta-based transportation services such as airlines and trucking companies to transport foreign goods to Alberta or ship local products to foreign markets also constitutes direct export sales.

Technology Transfer

And, finally, services export revenues can accrue to the province through technology transfer or contractual arrangements which transmit the rights to use intellectual property, technology, patents, trademarks, franchises, and other services that are owned by Albertans. A case in point is the packaged software industry, which often provides a contractual licensing agreement which permits the customer to use these intellectual properties each time it sells a software product.

Other Considerations

Past research studies pertaining to Alberta and Canadian service exports reveal some interesting themes and patterns. The United States represents the largest market for Canadian service exports, with western Europe, Africa, Latin America, and Asia comprising important markets as well. A national study by the Canadian Exporters' Association suggests that engineering and computer services and services in the construction and transportation fields are among the leading types of service exports.[1] The same study indicated that service exports may constitute a leading edge in the subsequent sale of other Canadian goods and services. In a survey of 77 service exporters, two-thirds of the firms indicated that

1. Research Project on Canada's Service Exporters. The Canadian Exporters' Association. January 1991.

service exports subsequently resulted in Canadian goods being sold abroad, while one-third reported that the sales of one type of service led to later sales of another type of service.

Foreign representation has been recognized as an important factor in achieving export success in some service areas. Among the service exporters that were surveyed in the Canadian study cited above, 79% indicated that the use of a foreign sales office, an agent, a local joint venture partner or some other form of local establishment is an integral part of their export strategy.

There are a number of factors which combine to restrain the export activities of Alberta service firms. These include the high costs of marketing abroad and various external barriers such as foreign government procurement policies, documentation requirements, and the difficulties of obtaining market intelligence. Notwithstanding these obstacles, it will become increasingly important that Alberta service firms pursue market opportunities outside the province. As the developing countries become increasingly competitive in the processing and manufacture of goods, the comparative advantages of advanced economies -- such as Alberta's -- will become more dependent on the provision of knowledge - and information-based services tied to the capabilities of our human resources.

2.4.3 Education and Skill Levels

Many of the business services industries -- particularly in the professional services area -- are characterized by the generally high levels of education and training of their personnel. Related to those high levels of education and skill, and consistent with the growing demand for these types of services, are the relatively high incomes that prevail among workers in these fields. Certainly, the stereotypical low-paying, low-skilled jobs sometimes associated with the service sector do not apply to business services.

The employees who are particularly essential to the business services industries appear to be of two types: the specialists and the "integrators". In an increasingly complex and rapidly changing business environment, the need for highly-trained, adaptable, and informed specialists will continue to expand. At the same time, there is a growing requirement for experienced and more broadly-based generalists who can integrate and link expertise in various fields. At all employee levels, workers will be

expected to have a greater comprehension than in the past of how their area of responsibility fits into and can reinforce the overall activities of the business.

Human capital is introduced into the economic process not just through the business services industries but, of course, also through organizations in the goods-producing and other services sectors. However, knowledge and human capital is especially prominent in the producer or business services industries. **The quality and productivity of the human capital employed in the business services area will have a direct and increasing bearing on the future development of the provincial economy and its overall competitiveness.**

The efficiency of our human resources will be influenced by a number of factors: the quality and continued accessibility of our education system; the availability of technological resources and our knowledge of how to effectively apply these; the provision of on-the-job training and regular skills upgrading; an ingrained work ethic and motivation; the adequacy of our health care services; our capacity for innovation and flexibility; and our sense of entrepreneurial spirit.

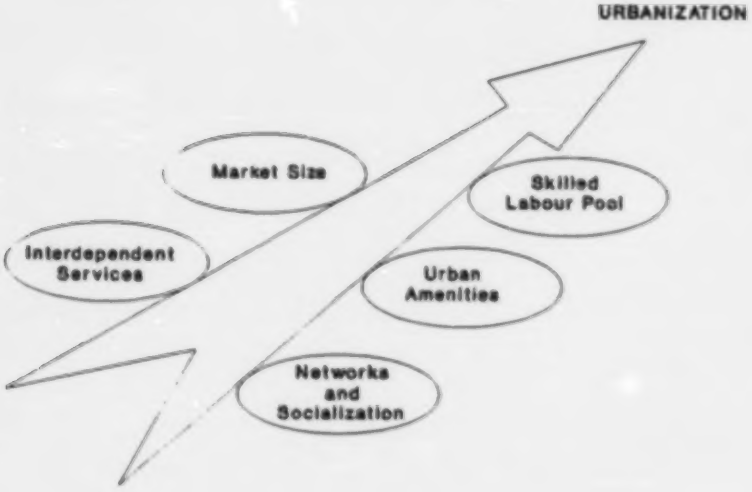
2.4.4 Urbanization

Service firms are not tied locationally to sources of raw materials, or for that matter to the availability of low-cost power, fuel, or transportation. It is sometimes assumed, then, that services must therefore be "footloose", and easily shifted to alternative locations. This has not been found to be true in the majority of cases and certainly much of the growth in the province's business services industries has accrued to the major urban centres.

An advertising agency may serve to illustrate why many business services industries locate primarily in larger urban centres. On any given day, a full-service agency may contract for services with photographers, typesetters and graphic artists. At the same time, agency personnel may use a recording studio or a television facility for the production of an advertising commercial. For the sake of efficiency, it is important that these support functions and personnel be located in general proximity to one another. As well, many agency employees, especially those in the creative end of advertising production, pursue artistic interests and identify closely to theatre groups, art galleries, and other cultural amenities. In short, advertising agencies and the people that work in the industry are predominantly attracted to an urban setting.

In more general terms, and as depicted in Figure 10, a number of factors can be attributed to this concentration of business services in the larger urban centres: the size of the market in those metropolitan centres for business services; the availability of other complementary and interrelated services that are used as inputs to various business services industries; the preference of many educated and skilled people for an urban lifestyle offering a wide range of cultural, educational, recreational, and commercial services; and the available pool of skilled employees in these centres.

FIGURE 10
Factors Contributing to the Urbanization of Business Services



The strong ties that exist among service firms and with goods-producers encourage business services to locate in relative proximity to one another. At one time, it was thought that the advent of computers and improved telecommunications might mean that many businesses would decentralize geographically and that this would hold economic promise for smaller centres and rural areas removed from metropolitan urban centres. In fact, and paradoxically, the new technological forces appear to have had an opposite, centralizing effect. The computer age now makes information quickly and readily accessible to everyone. However, this reinforces the need to locate close to the source of that information, in order to gain both a better interpretation of that information as well as other more informally-based ideas and perspectives.

If the new computer and communications technologies have not caused the business services sector to be "footloose", they have reduced the isolation of many non-urban centres. Clearly, the new technological developments have also made it more practical and feasible under certain circumstances to conduct one's business from a small non-urban centre.

2.4.5 Competition

The fact that the business services sector has grown at a disproportionately fast pace relative to the rest of the provincial economy has not meant that competitive forces in these industries have been dulled. On the contrary, **an underlying feature of the business services sector has been the dramatic intensification in the level of inter-company competition**. Some of this increased competition, for example in the transportation, communications, and financial services industries has been unleashed through government deregulation policies. Restraints on competitive practices have also been relaxed in a number of professional fields, including legal and accounting services. However, in the final analysis, it can be argued that the competitive changes that have occurred in the business services industries have been precipitated in large part by ongoing changes in economic and market forces.

The demands of the marketplace for business services and the increasing competition among business services firms are evidenced through various industry responses, which are discussed below and depicted in Figure 11.

- **Improved Quality of Services.** The increased sensitivity of customers to quality and reliability has placed greater demands on business services firms to improve the calibre of the services they provide. Business services are an important input to other goods and services firms, and the quality of those inputs affects the competitiveness and success of those customer organizations. A reputation for service quality has become a crucial determinant in the use of a particular firm, while historical customer-client ties and traditional customer loyalties appear to be less important than they once were.

FIGURE 11
Responses of Business Services to Increased Competition

- **Innovation of Services**. An associated but perhaps added dimension to the increased demand for quality is the growing importance of innovation and creativity as a factor in the provision of business services. The innovation, imagination, and new approaches that can be brought to bear on behalf of a service customer can provide a competitive edge to that firm and assist it to differentiate itself from its competitors.

- **Timeliness in Delivery**. The pace of the production cycle has accelerated in recent years, in part through the continuing improvements in information processing, communications, and transportation technologies. This has placed a demand on business services firms for a greater responsiveness and delivery turnaround of the services they provide. Indeed, the very expansion of the business services sector has been driven to some degree by the establishment of increasingly specialized service firms that can respond to urgent demands and to short-term customer "peaking" activities. The ability to respond to these demands has become an important sales point for some firms. The preparedness of a law firm to work

overnight to complete a contract, of an advertising agency to work through a weekend to organize a sales promotion, and of a drilling contractor to organize the necessary sub-trades in order to drill an oil well at short notice before a lease expires -- these commitments to a quick response become important competitive advantages in attracting clients.

- **Price Competition**. An increasing competition among service suppliers, a greater price sensitivity among customers, and in some cases the introduction of new, cost-saving technologies have meant that the prices charged by many business services firms in the province have been under pressure in recent years. Price is becoming a more important competitive feature as customers search to reduce their own costs and to maintain or improve their own competitiveness.

- **Marketing Orientation**. Anecdotal evidence gathered through discussions with industry representatives suggests as well that the increasingly competitive market for business services has resulted in the need by individual businesses to focus more strongly on their own marketing activities and to take a less reactive stance to the marketplace. This increased attention to marketing may take numerous forms, from maintaining closer relationships with existing clients, to assuming a broader range and a more active level of business promotional activities. It has also meant, for many businesses, formalizing market strategies and developing targeted sales approaches to specific market segments.

- **Service Offerings.** Increased attention is being given by business services firms to the range and mix of services they offer, and to the tailoring of those services both to the needs of the market and to their own sets of capabilities and objectives. In some instances, the selected response has taken the form of focusing on the delivery of a specialized or narrow range of services. In other instances, the need to provide a full and integrated line of services has been recognized and among the results has been a

conscious effort to expand internally or through mergers or acquisitions. Virtually all firms in the business services sector find it necessary to continually re-examine the types and range of services they offer in the context of the rapidly-evolving marketplace. There appears to be some evidence in a number of the business services industries of an increasing level of concentration, with a growing market share accruing to a small number of the largest service businesses that offer a full range of services. Examples include the consulting engineering, legal, and accounting services professions.

- **Strategic Partnerships.** Increasingly evident in the business services sector are the formal or informal "partnerships" that appear to be evolving among firms. This may take the form of an association of two or more firms supplying similar services but possibly having strengths in different areas of specialization or in different geographic or customer markets. A number of Alberta legal firms, for example, have associated with firms in central Canada, in the oil and gas centres of the U.S., and in major global cities such as New York and London.

  The partnering may also take the form of firms that provide complementary services in different business fields regularly working together on projects. This is often seen, for example, in informal consortia of engineering, architectural, and project management firms, at times in response to a client's preference to contract for a project on a "turnkey" basis.

  Apparent also are the strong client-customer relationships which in some cases have developed to the point where the supplying firm has the right of first refusal, or in fact an exclusive contract, to provide specific services to a customer. These strategic partnerships, which can take so many forms and variations, are pursued by the participant firms because of the competitive advantages these appear to offer them.

The pace of change that is being imposed on the business services sector through, on the one hand, economic globalization and international competition and, on the other, dramatic technological advances and increases in the store of human knowledge suggests that the sector will remain a dynamic and competitive one.

3. THE STRATEGIC ROLE OF BUSINESS SERVICES

The continued growth and strength of Alberta's business services has important strategic implications to the provincial economy. Section 2 of the report described some of the underlying features of the sector. This section examines how a dynamic and advanced business services sector will be a crucial factor in reaching Alberta's long-term growth and diversification objectives.

Perhaps the most important strategic implication of the business services industries stems from the integral role that these play in enhancing the productivity and competitiveness of the province's goods-producing resource and manufacturing industries.

Business services function both as a "lubricant" and a "stimulant" to these industries. They assist goods-producing firms to develop new and better products, to identify and penetrate markets, to reduce their costs of operation, to improve the quality of their outputs, to build and finance new and more efficient facilities and equipment, to respond more quickly to the needs of the marketplace, to improve their business management practices, and to raise the capabilities of their workers. In summary, business services are inextricably linked to the success of the province's goods-producing sector. The interaction between the business services industries and the goods sector is very much a two-way street. In one sense, the business services are provided as essential inputs and the demand for them is a derivative of the demand for resource commodities and manufactured goods. In another sense, however, business services have an important role in terms of stimulating the demand for goods and the growth of the goods-producing sector.

The overall contribution of business services to our economy comes about in other ways as well.

The sector plays a leading and independent role in providing essential services to other service providers, households, institutions, and government agencies. One Alberta firm, for example, provides library software for school and public libraries and for corporate document collections in Canada, the U.S. and overseas markets. Environmental consulting firms provide services to governments at all levels as well as to a host of goods and services industries. And another Alberta venture capital firm has assisted a biotechnology company to undertake research

and development that may culminate in new pharmaceutical products, computer software sales, and licensing agreements. In these and many other cases, the service activities may be quite removed from the goods-producing sector but constitute generators of new economic and value-added activities all the same.

Alberta's economy relies to a considerable degree on the interprovincial and international exportation of various goods and services. The province's international exports of commodities and services totalled approximately $17.2 billion in 1990, close to one-quarter of Alberta's Gross Domestic Product. Alberta's exports embody business services inputs as a constituent of the goods shipped abroad and include also the direct sale of business services. In respect even of such commodity exports as oil and gas, business services have a fundamental role in the various phases of the exploration, development, production, transportation, and marketing of those resources, and indeed, in the general competitiveness of the energy industry.

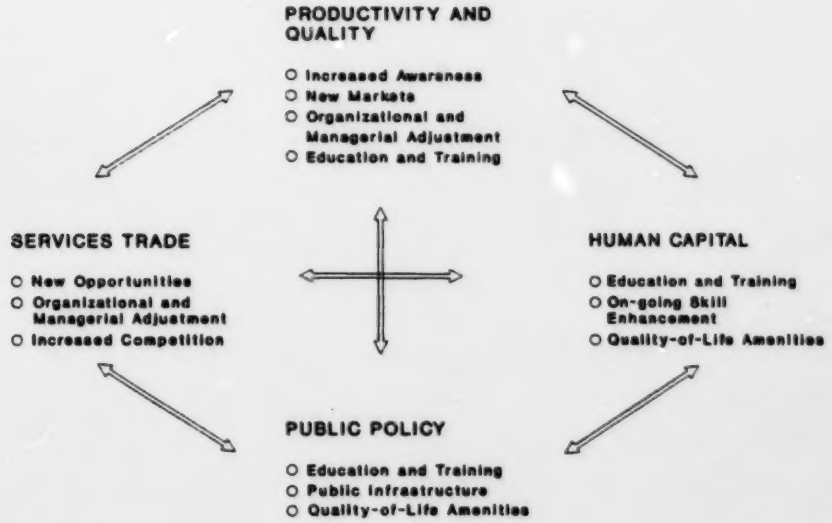
Business services -- which embody much human knowledge and capital -- are becoming a major factor in international trade, as both a constituent of goods trade and as tradeable "products" in their own right. In the case of direct exports, Alberta service firms have successfully penetrated overseas markets in areas as diverse as oilfield fire-fighting, navigational systems, agricultural consulting, municipal engineering, and process operational and control software. To the extent that Alberta can achieve comparative advantages and special competencies in the provision of various business services, this will assist the province to maintain a strong export position.

A further area of strategic significance relates less to the business services industries themselves than to the people employed in them. A characteristic of these people, as discussed earlier, pertains to their generally high levels of education and technical skills. Many are employed in small or mid-sized firms and have learned to be responsive and adaptable to rapidly changing market forces. Through their educational exposure and interests they are inclined to view changes and issues in a broad geographic context and to be interested in opportunities beyond the province's boundaries, providing an important link between Alberta and the rest of the world. It is clear as well that the province's pool of entrepreneurial talent draws heavily from the ranks of these individuals and this is important as a basis for new business enterprise and employment. And as well, the relatively high incomes of people in the sector form a reservoir of private capital which supports new business formation and investment in the province.

4. SECTOR DEVELOPMENT ISSUES

The continued development of Alberta's business services industries will derive in part from the growth of other parts of the provincial economy, especially the resource and manufacturing sectors. The growth of these goods-producing industries will require service inputs and these demands will generate activity in the producer service businesses. At the same time, however, business services themselves will have an important role to perform in the stimulation of economic activity in various sectors of the provincial economy. Accordingly, the growth of the province's economy will be affected by the resolution of a number of development issues that envelope the business services sector. These issues, shown in Figure 12, relate to the need to improve the productivity and quality of the province's business services, to improve Alberta's "balance of trade" in business services, to strengthen the foundation of human capital that is such an essential feature of the sector, and to embrace the sector with a policy environment that is open, neutral, and conducive to its growth.

FIGURE 12
Key Development Issues



4.1 SERVICES PRODUCTIVITY AND QUALITY

The need to improve production efficiencies, to reduce costs and to raise product quality has been a rallying point for manufacturers and resource processors for many years. With some notable exceptions -- for example in the financial and communications industries --- the service sector appears to have lagged considerably in terms of its consciousness and commitment toward the need for continuing productivity and service improvement. A number of hypotheses can be cited to explain this -- a regulatory environment which historically has protected some service industries from competition; a sense of professionalism in others which has been deemed to be incompatible with concerns for efficiency and output; the limited productivity benefits of new technologies that have been introduced in some industries; and possibly, a less intense level of historical competition in the business services area relative to the goods industries, which have been particularly vulnerable to national and international market forces. As well, most service industries have not benefited to the same degree as the manufacturing and processing sectors in terms of the development of new labor-saving technologies. Whatever the reasons, there are very real concerns regarding the evidently low level of productivity growth in the service sector. Low levels of productivity improvement detract from the overall growth of the economy and, as services account for a larger and larger share of economic output, these become harder to offset through growth in other sectors. Future improvements in the standard of living of Albertans are, of course, tied to the need to improve the productivity with which we produce goods and services.

Although service sector productivity growth generally has lagged that of the goods-producing industries, the generalization obscures the fact that in some service areas such as the transportation, communications, and financial fields, productivity improvements have been significant. There are other issues as well; for example, improvements in service quality are difficult to reflect in productivity measures and it can be argued that a significant share of the increased economic output generated by business services may be reflected in the output of other economic sectors.

Nonetheless, **the same need exists to improve productivity and quality in the service sector as in other parts of the economy**. The efficiency and effectiveness with which services are delivered will affect directly our economic competitiveness and our export success. The pursuit of a highly efficient business services sector in the province will

also have the effect of pre-empting a greater intrusion of foreign service businesses in the Alberta market. On-going improvements in transportation, communications, and information technologies are supporting a trend toward the globalization of many services and a strong business services sector in Alberta will minimize the displacement that might occur through inward competition from businesses located elsewhere. For these reasons, the business services industries in the province must become more conscious of the need to search for ways to reduce their costs and to raise the value and quality of their output.

Productivity improvement in the business services industries will be a function of a variety of factors, influenced by both private and public sector initiatives. A number of these factors are explored below:

- **Industry Recognition of the Need for Productivity and Quality Enhancement**. Perhaps the key factors that will affect the drive for improved productivity and quality in the business services area are first, the recognition by owners, managers, and employees of the competitive need to pursue these improvements, and second, a strong commitment toward continuing efficiency and quality enhancement.

- **New Markets**. The Alberta market for many business services is limited in size and the development of new market opportunities inside and outside the province will have the beneficial effects of allowing local firms to realize greater levels of specialization and economies of scale. A greater involvement in interprovincial and international markets will expose the industries in the province to wider competition and to new ideas and technologies, which in turn can be applied in the "home" market. The need to develop new markets implies the need to support a greater export orientation of goods and services. The pursuit of new markets suggests as well the possible merits of further privatization and deregulation initiatives which might expand the local market for commercial services and prepare local firms for a more competitive domestic and international business environment.

- **Organizational and Management Adjustment**. Many managers and owners of business services in the province appear to have been attracted to the sector by a technical or professional interest or capability, or by an entrepreneurial awareness of opportunity. For many of those firms -- which typically are of relatively small size -- the necessary organizational, human resource management, financial, and marketing capacities are not sufficiently developed and the growing need in the new business environment for the "micro-management" and quality assurance of all facets of the firm's activities is not adequately recognized. Improvements in the management capabilities of the province's business services industries will underpin the development of a stronger service sector.

  Organizational changes may also be necessary for some firms to remain competitive. For example, there appears to be signs that a number of engineering, legal, and accounting firms have pursued collaborative arrangements through mergers, acquisitions, and formal associations with a view to widening their geographic representation, broadening their service capabilities, strengthening particular areas of specialization, and realizing administrative and operational cost economies.

- **Education and Training**. The continued growth of the business services industries will require a supply of well educated, adaptable, and technically competent employees. With knowledge and information forming a cornerstone to the sector -- and these evolving and expanding so rapidly -- it is clear that the levels and quality of education, training, re-training, and continuing education in the province are crucial to the development of Alberta's business services. A recognition of the importance of these by employees, industry and government is necessary, as is the commitment to deliver the necessary human resource programs through a combination of private and public training and educational mechanisms and institutions.

There are some indications that the strong levels of competition and the prevalence of small firms with limited financial resources in many business services industries limits the availability of services for, and the commitment to, employee training and upgrading. The average rate of return on gross revenues in the Alberta consulting engineering industry, for example, has been estimated currently to be around 5%, a rate which would discourage many firms from embarking on internal educational and upgrading programs.

These factors will all need to be addressed in parallel if the province's business services are to remain vibrant and competitive.

4.2 SERVICES TRADE

The on-going expansion of trade in services and the parallel trend toward increasing global competition has strategic implications to Alberta's business services. On the one hand, the penetration of the Alberta marketplace by outside firms poses a potential threat to indigenous businesses. And, on the other hand, growing extra-provincial domestic and international markets for business services offer new opportunities to local firms.

For most business service establishments, the Alberta market will remain the major focus of their commercial activities. For these businesses, it is important to maintain a high level of competency and productivity to preempt the potential loss in markets to outside firms. The threat is a real one. A recent study of business services trade between Canada and the U.S. estimated that this country had an annual trade deficit in the sector of $3.1 billion in 1988.[1] The Canada - U.S. Free Trade Agreement expands the opportunities and threats associated with the two-way flow of business services between the two countries.

Numerous examples of success can be cited of particular Alberta business services firms penetrating foreign markets. Many other local service firms have an integral role in the development and foreign sale of resources and manufactured products. But while promising, the export market is also a competitive one and typically requires a substantial time and financial commitment in order to achieve success. Alberta firms are

1. Exporting Services to the U.S.: A Guide. Ernst & Young. Prepared for the Ministry of International Business & Immigration, Province of British Columbia and Industry, Science, and Technology Canada. April 1990.

faced with a number of export obstacles which must be addressed. These include a lack of export know-how and an unfamiliarity with foreign markets, limited financial resources, and an inadequate range or depth of service capability. Some of these obstacles originate from the relatively small size of many Alberta service firms and compound the many other barriers to foreign trade that are faced by all potential exporters.

The development of a strong trade presence in the business services area will benefit the province in a number of ways: through export earnings, the geographic diversification of markets, the formation of new international commercial relationships and networks, and the heightened exposure of Alberta firms to new ideas and ways of doing business. Export successes will serve as models to other local firms wishing to expand their horizons and also provide the experiences and reputation necessary to build further on those successes in other market areas.

The expansion of Alberta's services trade should constitute an essential component in the province's long-term economic development strategy.

4.3 HUMAN CAPITAL

The business services industries are very much information -- and knowledge -- based, and the work force attracted to these industries constitutes the most important factor in the sector's development. The growth of the province's business services will provide employment opportunities for many young, innovative, and educated Albertans. In the absence of these local opportunities, these young people will be attracted to other areas where they are able to apply their abilities. These human assets have a greater long-term strategic significance to the province than does its storehouse of non-renewable and renewable resources.

The calibre of human capital employed in the business services industries is the underlying feature that will differentiate the industries in this province from those in other regions and is the mainspring of comparative advantage in the sector. This implies the need for a strong commitment to quality education at the primary, secondary, and post-secondary levels and to the accelerated provision of training, education, and upgrading throughout the course of an employee's working life. The importance of this on-going skill enhancement is compounded by the declining life-cycle of jobs, the rapid changes in processes and technologies, in the expansion of our base of

knowledge, the dramatic organizational change that is occurring at both the industry and firm levels, and the fast-paced evolution and segmentation of markets. With the increasing globalization of business services, there is a need as well for employees in the sector to have an international perspective, foreign language capabilities, and an understanding of cultural patterns in other areas.

Young, educated, and adaptable people have transferable skills, and quality-of-life features also will weigh in their choices of locations and types of employment. This demands that educational, recreational, cultural, commercial, and infrastructural services and facilities in Alberta are of a standard and diversity that they will find appealing, and that taxation policies and the overall business environment remain favorable in relation to other jurisdictions.

The overall objective in Alberta should be one of developing a work force that is educated, skilled, motivated, flexible, and creative. The realization of that objective will go hand-in-hand with the development of a strong business services sector.

4.4 PUBLIC POLICY

The purpose of this study has not been to identify specific public policy and program initiatives for the various industries that comprise the business services sector. **What is important to these industries is that the business and economic environment in the province remain positive, open and unencumbered, and supportive of innovation and private initiative.** Some of the key roles for government in encouraging the growth of business services, which are strategic to the province's future economic development, are related to the need for a strong and quality-oriented educational system, to the development of the kind of quality-of-life services that encourage skilled and entrepreneurial people to choose to live in the province, and the maintenance of an efficient and modern public infrastructure that is conducive to business operations.

Business services clearly represent an integral part of the provincial economy, where they interact with other sectors -- and especially the goods-producing sectors -- in generating employment and economic wealth for the province. The importance of business services must be recognized in the government's organizational, program, and policy framework.

5. SUMMARY AND CONCLUSIONS

Service activities today form a dominant part of our economy. In Alberta, the service sector accounts for 60% of provincial output and more than 70% of employment.

An important component of the service sector are the business services, which essentially serve the needs of other businesses and are sometimes known as "intermediate" or "producer" services. The business services industries, which constitute about one-fifth of total service sector employment, have grown rapidly in recent years and have been shown to make a crucial contribution to economic growth, productivity improvement and competitiveness, and export success. These business services are the subject of this study.

Industry Characteristics

An important feature of the business services industries is that they are very much knowledge-and information-based. This feature is reflected in the generally high education and skill levels of the people employed in these services, and indeed, the strength and vibrancy of business services will in the long term be governed by the quality of these human resources.

The rapid growth of the business services industries derives in substantial part from the increasing importance of knowledge capital as an input to the production of goods and services and from the growing functional specialization in our economy.

The business services industries have a strong and two-way relationship with the goods-producing sector. They serve in the role of a "lubricant", enhancing the smooth and efficient operation of goods producers, assisting them to reduce costs and develop new products, and generally helping them to marshal their comparative advantages. But they serve also to stimulate growth in goods-production through the ideas and innovation they generate and also because to an increasing degree many services induce subsequent demands for products.

Services -- and business services particularly -- have become a significant element in world trade. Service exports can take several forms and not all are patently obvious. The direct sale of services is

becoming increasingly important. However, other exports of services are less apparent but may be even more dramatically significant. Many services are embodied as essential inputs in the primary and processed goods we export and others are provided as a necessary companion to commodity exports. Such services are assuming an increasingly crucial role in the exportation of goods yet are not reflected in reported trade statistics.

The rapid growth of the business services industries has not insulated them from competitive forces. On the contrary, the rapidity of change in technology and in our state of knowledge has in combination with other economic factors intensified the level of inter-company competition. This has had various impacts on the sector and has led to, for example: an increased emphasis on service quality; an accelerated delivery turnaround of services; an expanded awareness of the need for innovation, imagination, and new approaches in providing services; greater price competition; an increased sales and marketing orientation of service providers; a greater attention to the range and mix of services offered and to the tailoring of services to the needs of the market; and an accelerated search for strategic alliances and associations with other business organizations.

Industry Development

Alberta's business services industries will have a strategic role in the long-term growth and diversification of the province and in its evolution to a more advanced stage of development. The adequacy with which the sector satisfies that role will in turn depend on the responses to a number of issues facing these business services industries.

Productivity

The first of these issues relates to the pressing need to improve productivity and quality in the services fields in the same vigorous way that these improvements are being pursued in the goods-producing sectors throughout the global economy. The efficiency and effectiveness with which services are delivered will affect directly our economic competitiveness and our export success, but there does not yet appear to be a sufficiently adequate and pervasive commitment to productivity improvement in the business services area.

These improvements will depend on a combination of public and private initiatives, including a recognition of the importance of higher productivity and quality, the development of new markets inside and outside the province, business organizational and management change, and the commitment to raise the quality of our human resources through improved education and training.

Trade in Services

The expansion of cross-border services trade has strategic implications to Alberta's business services, and to the provincial economy as a whole, and should constitute an essential component of Alberta's long-term economic development strategy. The penetration of the Alberta marketplace by outside firms poses a potential threat to indigenous businesses while on the other hand, growing extra-provincial domestic and international markets for business services offer new opportunities for local firms.

The development of a strong trade presence in the business services area will benefit the province in a number of ways: through export earnings, the geographic diversification of markets, the formation of new international commercial relationships and networks, and the heightened exposure of Alberta firms to new ideas and ways of doing business. Export successes will serve as models to other local firms wishing to expand their horizons and also provide the experiences and reputation necessary to build further on those successes in other market areas.

Notwithstanding the numerous successes of particular Alberta firms in penetrating foreign markets, the vigorous international competition and the necessary financial and resource commitments to achieve success can be daunting. Alberta firms are faced with a number of export obstacles which must be addressed. These include a lack of export know-how and an unfamiliarity with foreign markets, limited financial resources, and an inadequate range or depth of service capability. Some of these obstacles originate from the relatively small size of many Alberta service firms and are compounded by the many other barriers to foreign trade in services that are faced by all potential exporters.

Human Capital

The calibre of the work force attracted to the business services industries comprises the most important factor in the sector's development. This implies the need for a strong commitment to quality education at the primary, secondary, and post-secondary levels and to the accelerated provision of training, education, and upgrading throughout the course of an employee's working life.

With the increasing globalization of business services, there is a need as well for employees in the sector to have an international perspective, foreign language capabilities, and an understanding of cultural patterns in other areas.

Young, educated, and adaptable people have transferable skills, and quality-of-life features also will weigh in their choices of locations and types of employment. This demands that educational, recreational, cultural, commercial, and infrastructural services and facilities in Alberta are of a standard and diversity that they will find appealing, and that taxation policies and the overall business environment remain favourable.

The overall objective should be one of developing a work force that is educated, skilled, motivated, flexible, and creative. The realization of that objective will go hand-in-hand with the development of a strong business services sector.

Public Policy

As mentioned, the purpose of this study has not been to identify specific public policy and program initiatives for the various industries that comprise the business services sector. What is important to these industries is that the business and economic environment in the province remain positive, open and unencumbered, and supportive of innovation and private initiative. The key roles for government in encouraging the growth of business services are related to the need for a strong and quality-oriented educational system, to the development of the kind of quality-of-life services that encourage skilled and entrepreneurial people to choose to live in the province, and the maintenance of an efficient and modern public infrastructure that is conducive to business operations.

Business services clearly represent an integral part in the provincial economy. That importance must be recognized in the government's organizational, program, and policy framework.

ANNEX A

BUSINESS SERVICES PROFILES

Preface to Business Services Profiles

This annex provides brief profiles of the major industries which comprise the business services sector. The profile information has been developed by the study team based on its review of various industry reports and publications, interviews with industry representatives, and its collective knowledge of the provincial economy and the specific industries. The profiles are not intended to be comprehensive or exhaustive. They are intended rather to provide the reader with a sense of the size -- and more importantly -- the economic contributions, inter-industry linkages, and trends of these business services. These relatively focused industry activities may bring the discussions provided in the main text of the report into greater perspective.

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1. Accounting Services

Importance:
- 1,300 firms with a total employment of 10,500 people
- accounts for 6% of the total business services industry

Growth:
- moderate

Importance of Exports to the Industry:
- minimal

Role/Benefits:
- provide appropriate financial information to management and shareholders
- minimize client's tax exposure
- assist with computerization of client's accounting tasks, and in design and implementation of financial systems
- improve financial control

Range of Services:
- auditing
- tax advice, especially income tax
- financial systems design, operation, and maintenance
- insolvency work
- business valuation
- bookkeeping
- personal financial planning

Backward Linkages:
- computer manufacturers and software developers
- standard business services, such as legal services and office supply firms

Forward Linkages:
- small, medium, and large companies
- individuals
- institutions and all levels of government

Key Features and Trends:
- virtually all businesses use accountants or bookkeeping services for at least a part of their financial administration
- national accounting firms account for a large and probably increasing share of the market in Alberta
- audit and review engagements are by law limited to those people with a professional accounting designation; the volume of work available in the audit area is shrinking relative to other segments of accounting services
- taxation services are of increasing importance to many practitioners
- practitioners tend to have relatively high levels of education; lifelong learning is stressed by professional organizations as a key to continued relevance of the accounting industry
- increased competition – more marketing, computer accounting and consulting, general business consulting, personal financial planning, and course development and delivery
- increased reliance on computer technology
- services to corporate and individual clients are concentrated close to those clients and tend to be in the larger urban centres

2. Advertising Services

Importance:
- 250 firms with a total employment of 4,700 persons
- 3% of total business services employment

Growth:
- moderate

Importance of Exports to the Industry:
- minimal; some extra-provincial sales activities

Role/Benefits:
- stimulation of demand for client's product
- information dissemination
- optimization of media buying expenditure
- speed and responsiveness of service

Range of Services:
- client liaison
- creation of advertising campaigns
- advertising production
- media campaign design
- media buying
- market research
- public relations
- image planning, issues management

Backward Linkages:
- printing services
- colour separation services
- writers
- typesetters/desk-top publishing
- photographers
- graphic designers; illustrators
- recording studios
- video production facilities
- computer hardware and software suppliers
- market research firms
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- large packaged consumer goods companies; agricultural marketing agencies
- chain retail stores and restaurants
- all levels of government
- companies of all sizes in diverse industries
- non-profit sector

Key Features and Trends:
- world-wide trend toward globalization of advertising agencies has likely run its course
- incorporation of peripheral activities such as public relations into the industry
- increasing use of technology in design and production of advertising
- emerging trend among large clients to unbundle services by contracting with different agencies to perform different aspects of the process such as advertising creation and media buying
- strategic partnering between clients and advertising agencies in which the advertising agency becomes a marketing partner
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas

3. Agricultural Services

Importance:

- 580 firms, employing some 1,600 persons
- accounts for less than 1% of business services employment

Growth:

- low to moderate
- growth linked to the general state of the agricultural sector in Alberta, which has been under pressure from low commodity prices for the past five years

Importance of exports to the industry:

- minimal but growing ; some specific services, especially related to livestock, have a significant export orientation

Role/Benefits:

- provide production capacity that is required on a non-continuous basis
- optimize benefits from inputs, such as fertilizer and pesticides
- support animal health and breeding excellence
- technical innovation
- provision of management support services on a non-continuous basis

Range of Services:

- custom field work (tillage, fertilizer and pesticide application, harvesting)
- seed cleaning
- grain and oilseed collection, storage, and distribution
- soil analysis
- veterinary and animal nutrition services
- animal breeding and genetics, including artificial insemination and embryo transplants
- farm management and marketing consulting
- agricultural engineering
- land appraisal
- provision of credit
- transportation

Backward Linkages:

- truck and rail transportation firms
- suppliers of machinery for seed cleaning, bagging, and grain handling
- agricultural equipment dealers and manufacturers
- pesticide and fertilizer dealers and manufacturers
- pharmaceutical and feed suppliers
- bulk fuel dealerships
- standard business services, such as legal and accounting services

Forward Linkages:

- farmers
- agricultural organizations and associations
- federal and provincial levels of government

Key Features/Trends:

- tied closely to the general health of the agricultural industry, which is adversely affected by low commodity prices, especially in the grain sector
- historical strong presence of the Department of Agriculture as a service provider to farmers may have contributed to the relatively small size of the private agricultural services industry
- custom services, especially in crop production, are often provided on a part-time basis by primary producers
- the demand for custom work is limited by the family farm-orientation of the agricultural sector
- rising crop input costs provide an incentive to optimize input use by using soil tests
- purebred livestock breeding is an increasingly sophisticated industry with a heavy reliance on technology

4. Computer Services

Importance:
- relatively small at present
- industry does not conform to established definitions
- many computer services are provided in-house in support of other activities of the organization
- emphasis here is placed on computer consulting and software development

Growth:
- high

Importance of Exports to the Industry:
- the packaged software market is essentially North American or even world-wide; software from Alberta competes in an international market
- the computer consulting segment of the industry is subject to competition from out-of-province suppliers
- computer related research and development results are often embodied in exported goods and non-computer services

Role/Benefits:
- increased productivity and service quality through application of computer technology
- increased speed of information flows, resulting, for example, in tighter inventory control and quick billing cycles
- enable clients to purchase and use state-of-the-art computer and software technologies without incurring the expense of developing the in-house expertise
- research and development in such diverse areas as process control, biotechnology, testing, and artificial intelligence

Range of Services:
- computer services encompass a large variety of activities ranging from biotechnology research to business software development
- integration of computer and telecommunication technologies
- dissemination of up-to-date computer technology
- business solutions using computer technology
- research support
- software development for specific business and institutional applications
- technical support to software and hardware users

Backward Linkages:
- computer hardware and software firms; services and products can be brokered or bought from suppliers and sold to clients
- training providers, especially if the services provided have an impact on a large number of non-systems professionals
- specialized business services, such as providers of information specific to the computer technology; marketing consultants
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- the market for computer consultants consists mainly of larger companies in primary, secondary, and tertiary sectors and all levels of government
- packaged software is sold to the general business market; some specialized applications have targeted specific niche markets

Key Features and Trends:
- computerization affects virtually all aspects of research and business, but the majority of computer applications involve packaged software developed outside Alberta
- the packaged software segment of the Alberta industry is still in an early stage of development; many of its practitioners are self-taught
- computer consulting is a more mature industry recruiting mainly university or technical college graduates
- consulting services to corporate and government clients are geographically concentrated around their clients and tend to be in larger urban centres
- a general trend towards turnkey solutions where the computer consulting firm delivers a business rather than a technological solution; this trend has not yet been very pronounced in Alberta
- a move towards formal and informal contracts to supply computer consulting services on a sole source/right of first refusal basis; the computer consulting firm in effect becomes what would have been an in-house systems development division
- larger emphasis on client involvement and training to ensure that the suggested systems solution is addressing the needs of the client
- continuous technological change, with the rate of change increasing
- use of open designs so that the client is not tied to a proprietary hardware or software design
- increasing need to balance new promising emerging technologies with the uncertainty relating to the acceptance of that technology and the survival of the company that supplies the technology
- the increasing prevalence and complexity of micro computer-based systems (e.g. LANs) spawns a need for system maintenance and repair service providers

5. Engineering Services

Importance:
- 500 consulting engineering firms with a total employment of 6,800 in consulting engineering field, one-third of which are professional engineers, one-third technologists, and the balance support staff
- total number of professional engineers in Alberta 22,000
- consulting engineering accounts for approximately 4% of business services employment

Growth:
- moderate

Importance of Exports to the Industry:
- low to moderate

Role/Benefits:
- ensure technical integrity of capital projects resulting, among others, in safety for the general public; a significant role in increasing efficiency, reducing costs of production facilities by up-to-date production systems design
- provide technical services that are required on a non-continuous basis
- technology transfer
- provide services at a low cost, especially because of high levels of competition

Range of Services:
- technical feasibility studies
- engineering cost estimates
- conceptual and detailed design; specifications
- inspection and testing
- procurement, commissioning, and operating of projects; project management
- process and petroleum-related engineering services, such as reservoir engineering, recovery techniques, refineries, etc.
- plant maintenance

Backward Linkages:
- computer hardware and software suppliers, especially CADD, computer-aided design and drafting
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- private sector firms; large oil and gas and resource firms are a key market for engineering services
- manufacturing operations
- all levels of government

Key Features and Trends:
- services to corporate and government clients are concentrated close to the clients and tend to be located in the larger urban centres; field services often delivered outside urban areas
- increased use of CAD/CAM applications reduces the ratio of engineers to technicians
- increasing trend to privatize government engineering services which will cause some growth in the consulting engineering sector by shifting the locus of work from in-house engineers to consultants
- environment-related work is growing in importance
- world-wide trend towards turnkey solutions to engineering problems, in which the consulting engineering firm does the design, procurement, construction and capital financing; many Alberta firms are not large enough to provide this range of services at this time
- some evidence of greater concentration of the industry among large firms, although the industry in Alberta is still dominated by small firms
- local market is of primary importance for engineering consulting firms, but increased recognition of the importance of foreign markets

6. Environmental Services

Importance:
- relatively small at present
- industry does not conform to established definitions

Growth:
- high

Importance of Exports to the Industry:
- low to moderate

Role/Benefits:
- reduce risk of environmental damage
- adherence to environmental standards and regulations
- ensure environmental integrity of capital projects
- provide technical services that are required on a non-continuous basis
- technology transfer to user organizations
- provide services at a low cost, because of high levels of competition

Range of Services:
- engineering services
- laboratory testing
- plant operation
- biophysical consulting
- recycling and conservation
- impact assessment and mitigation

Backward Linkages:
- computer hardware and software suppliers, especially in the area of CADD
- laboratory equipment and supplies
- construction trades and building materials supplies

Forward Linkages:
- medium and large firms, especially in the oil and gas and resource industries, including forestry
- all levels of government
- resource, chemical, and other companies that purchase recycled materials

Key Features and Trends:
- the industry is an amalgamation of existing disciplines, most importantly engineering
- worldwide trend towards turnkey solutions to engineering problems
- Alberta environmental service firms tend to be too small to deliver turnkey services, encompassing the design, procurement, and implementation phases of a project
- the focal shift from classical engineering to environmental services leads to some manpower shortages as not all engineers have the necessary background and outlook
- a tendency for firms to agglomerate in order to expand the range of services offered, and to accommodate larger projects
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas; field services often delivered outside of urban areas

7. Financial Services

Importance:
- employs over 30,000, accounting for roughly 17% of business services employment

Growth:
- moderate

Importance of exports to the industry:
- the industry supports exports of Canadian firms through export loans, letters of credit, and foreign exchange arrangements
- services provided by foreign branches and subsidiaries and to non-residents in Canada are significant to the banking industry
- Alberta-based financial institutions are primarily focused on the local market

Role/Benefits:
- provides business access to working capital, mortgages, investment loans, and debt and equity capital to fund operations, acquisitions, and new investments
- disseminates financial information and ties Alberta businesses to the international market place

Range of Services:
- deposit taking
- loan assessment and disbursement
- payment conduit between parties; automated transfer of funds
- conduit for investment instruments

Backward Linkages:
- real estate development
- computer hardware and software providers, including banking machines
- telecommunication hardware, software, service providers
- printing companies
- standard business services, such as legal, accounting and office supply firms

Forward Linkages:
- all businesses
- virtually all households
- all levels of government

Key Features/Trends:
- no business activity takes place without some involvement of the financial sector
- national banks and trust firms account for the overwhelming share of the market
- growth and development of Alberta-based financial institutions was adversely affected by recessionary conditions in the early 1980's and the failure or near failure of a number of larger regional financial organizations
- high level of competition leads to an increasing market orientation, as evidenced by extended opening hours, high levels of advertising, and customer incentives to switch between competitors
- development of new products such as credit, debit, and affinity bank cards, automated banking machines and new financial instruments (e.g. reverse and split level mortgage, money market and foreign currency accounts); advances in financial theory have also spawned new products such as financial options and junk bonds
- implementation of productivity and cost saving measures through the reduction of paper flows especially through the application of computer and communications technologies
- high level of reliance on computer and telecommunication technology to provide customer service and productivity increases
- move towards out-sourcing of back office data processing tasks to outside service providers
- employment profile in the industry shifting to more highly educated personnel

8. Legal Services

Importance:
- 1,600 firms employing some 8,500 persons
- approximately 5% of total business services employment

Growth:
- moderate

Importance of Exports to the Industry:
- minimal foreign sales, but extra-provincial activity/client referrals important

Role/Benefits:
- reduce risk associated with business ventures, restructurings, contractual arrangements, and financings
- dispute resolution
- protect business interests vis-a-vis regulations
- formulate financing and corporate arrangements to support new business ventures
- specialized legal functions to permit smooth flow of business activities, transactions
- independent opinion

Range of Services to Business:
- regulatory and administrative law
- taxation
- environment
- labour law
- corporate/commercial
- litigation
- banking
- oil and gas
- real estate

Backward Linkages:
- external professionals/expert witnesses
- court reporters
- computer manufacturers and software designers
- standard business services, such as accounting services, office supply firms
- seminar, professional development organizations

Forward Linkages:
- government and institutions
- companies of all types and sizes
- individuals
- commercial clientele accounts for an increasing share of revenue

Key Features and Trends:
- primary and secondary goods industries rely extensively on legal services
- clear need for lawyers to remain up-to-date with legal decisions changing business patterns, new information; need for continuous professional upgrading
- legal support functions tend to require higher skill levels than standard business support services; some indication of substitution of support staff by technology-based systems and, consequently, a reduction in the ratio of support staff to lawyers
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas
- increasing competition – more marketing, cross-selling of services, time spent with clients, newsletters, seminars for clients, proposal tendering
- increased price sensitivity on the part of clients, reduced loyalty, quality monitoring
- increasing sophistication of users
- demand for services will grow, particularly as customer sophistication and awareness of available services grows, the mystique of the service declines, and the cost-effectiveness of external services becomes more apparent
- increasing reliance on computer technology for management, accounting, information databases, and even marketing
- some evidence of increased concentration of market among larger firms offering a full range of specialized legal services
- mergers and formalized associations with firms in other parts of Canada and U.S. have become increasingly common as a means of expanding geographic coverage to serve large clients and to provide capabilities in specialized areas

9. Management Consulting

Importance:
- an estimated 1,100 firms, employing some 3,300 persons
- accounts for less than 2% of total business services employment

Growth:
- moderate

Importance of Exports to the Industry:
- modest; some intra-provincial and international trade of management consulting services

Role/Benefits:
- independent opinion
- provides management decision-support information in an increasingly complex business and public sector environment
- reduces risk associated with business ventures
- provision of management support services on a non-continuous basis
- improves competitiveness through cost reduction, organizational change, market research, improved management information, and planning and strategy development

Range of Services:
- organizational analysis and support
- strategic planning and decision support
- program and project evaluation
- economic and financial analysis
- market research
- human resource planning and development

Backward Linkages:
- computer manufacturers and software developers
- external professionals/sub-consultants
- graphic artists/map makers
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- medium and large companies in all sectors
- all levels of government
- non-governmental organizations and institutions

Key Features:
- increasing need for practitioners to remain abreast of new developments; continuous professional upgrading
- increasing reliance on computer technology to deliver high quality and timely results to the client
- practitioners tend to be highly educated
- increasing specialization within the industry; creation of specialized practices within larger firms
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas

10. Oil and Gasfield Services

Importance:
- 1,800 businesses generating some 15,000 - 20,000 person years of employment
- just under 10% of total business services employment

Growth:
- sharply cyclical business; currently the sector is contracting; further consolidation is expected

Importance of Exports to the Industry:
- moderate

Role/Benefits:
- integral part of the exploration and development of the province's oil and gas resources
- ability to respond quickly to changes in the business volume
- low cost service providers, especially because of high level of competition
- technical innovation

Range of Services:
- seismic exploration
- oil and gas well drilling
- well maintenance and servicing
- specialized services, such as production testing, subsurface fracturing, well logging, etc
- camp catering

Backward Linkages:
- supply stores
- equipment manufacturers
- industrial materials, especially metal fabrication
- specialized suppliers, e.g. drilling mud
- computer hardware and software supplies
- camp supplies
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- oil and gas producers
- other interdependent oil and gas service companies
- pipeline, collection, and distribution utilities

Key Features and Trends:
- the oil and gas industry is a clear example of an industry in which many services tend to be provided by outside contractors rather than by in-house staff; there are no integrated oil and gas companies that provide all necessary exploration and development services in-house
- the Alberta market is characterized by many small independent operators
- industry uses specialized equipment that has limited application outside the oil industry
- low energy prices and the ensuing decline in drilling activity have resulted in some merger activities by medium and larger firms; smaller firms have a tendency to remain independent
- continued technological innovation and perfection of existing techniques to enhance recovery levels
- greater emphasis on safety
- service activity fluctuates seasonally and in response to oil and gas prices and oil industry cash flows

11. Passenger and Freight Transportation

Importance:
- total transportation sector employs some 55,000 people, accounting for 35% of business services employment. Trucking, rail and air services account for two-thirds of total transportation employment

Growth:
- growth of air passenger traffic over the long run, but poor prospect in the short run due to poor economic conditions
- trucking growing at the expense of rail transport, on intraprovincial and U.S. routes; rail freight volume is growing on interprovincial routes, especially for shipments to marine ports
- demand is largely derived from general economic activity

Importance of Exports to the Industry:
- direct export revenues consist primarily of trans-border trucking services, and extra-provincial revenues of Alberta-based airlines, particularly CAIL
- transportation costs and services are an important element in the extra-provincial shipment of resource commodities and manufactured goods

Role/Benefits:
- major contributor to the globalization of business activities
- allows for the efficient movement of people and goods
- transportation links profoundly influence business location/investment decisions and tourism flows
- a major element in the competitiveness of Alberta's commodities and goods exports

Range of Services:
- scheduled and chartered air services
- scheduled and chartered bus services
- urban transit systems
- rail services
- trucking
- taxi services

Backward Linkages:
- transportation equipment manufacturers
- telecommunication companies
- computer hardware and software providers
- fuel suppliers

Forward Linkages:
- business and leisure travellers
- manufacturers
- resource companies

Key Features and Trends:
- very capital intensive industry
- transportation infrastructure by and large provided by the public sector and used by private sector transportation companies
- air passenger industry has been consolidated into two national airlines, both with regional feeder systems
- increasing concentration in trucking industry
- deregulation has intensified competition in air and trucking transportation
- service, speed, reliability increasingly important to industry
- continuing drive to increase productivity in the industry, for example by substituting diesel tractors for gasoline-using straight trucks, an increasing use of personnel other than truck drivers to load and unload cargo, and more infrastructure for intermodal transportation of goods

12. Private Educational Services

Importance:
- small at present

Growth:
- moderate

Importance of Exports to the Industry:
- minimal; with few exceptions, training firms concentrate on the local market

Role/Benefits:
- assists in a faster and more appropriate integration of technological innovations into the workplace
- reduced supervisory time for transferring necessary workplace skills
- quick response to identified client needs; specialized provision of workplace-centered training

Range of Services:
- technical training related to the introduction of new technologies
- training related to specific business skills (e.g. applications software)
- adult upgrading, both secondary and post-secondary
- seminars, professional development services

Backward Linkages:
- suppliers of educational software
- suppliers of computer hardware and supplies, audio-visual services
- standard business services, such as legal and accounting services, office supply firms
- commercial meeting room space
- publishing industry

Forward Linkages:
- businesses of all types and sizes, ranging from small firms in the hospitality industry to large resource firms
- governments, especially as purchasers of training places to be filled by sponsored individuals with identified training needs (CJS, UI related re-training)
- individuals
- professional organizations

Key Features and Trends:
- an increased recognition of the need for life-long learning
- the industry requires persons with high educational attainment in the areas of education (teaching, curriculum development) and information dissemination (e.g. software design)
- generally located close to client base, which tends to be in larger urban centres
- increasing use of computer-based educational tools
- increased competition among training firms and between private and public sector training providers; increased emphasis on marketing
- increased occurance of public educational institutions to offer commercially-oriented programs on a cost-recovery basis

13. Technical Services

Importance:
- relatively small

Growth:
- moderate to high

Importance of Exports to the Industry:
- minimal

Role/Benefits:
- assurance that structures/equipment will perform in accordance with the design parameters
- adherence to governmental regulations
- calibration of inputs (e.g. soil samples and fertilizer recommendations)
- quality control

Range of Services:
- materials engineering
- (non) destructive testing
- quality surveillance
- soil testing (top and sub-soils)
- contamination monitoring

Backward Linkages:
- laboratory equipment and chemical suppliers
- standard business services, such as legal and accounting services, office supply firms
- vehicle dealerships

Forward Linkages:
- large resource and "smokestack" industries
- all levels of government
- farmers
- engineering consulting firms

Key Features and Trends:
- strong linkages to engineering and environmental services
- increasing emphasis on environmental concerns raises the need for technical analytical services
- many pollution monitoring and control activities are induced by government regulations
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas

14. Telecommunications Services

Importance:
- industry dominated by two telephone carriers providing employment for 23,000 persons, employment totals 27,000
- accounts for 13% of the business services sector employment

Growth:
- moderate to high, especially in the area of computer data and facsimile transmissions

Importance of Exports to the Industry:
- long distance toll revenues
- the telecommunication industry operates in an essentially nation-wide and even North America-wide market
- parts of the industry are potentially open to competitive pressures from outside Alberta

Role/Benefits:
- major contributor to the globalization of business activities, by improving and speeding transmission of data and information between geographically separated parties
- key role in the integration of Alberta into the global economy
- reduced need for travel
- instantaneous information flows, reducing costs and time of transferring people and information, increasing management control, shortening production, distribution, and billing cycles
- distributed and remote access to central data processing facilities resulting, among others, in improved customer service and the opening up of new markets both geographically and functionally

Range of Services:
- voice-based communication
- non-voice services, including data, telex, audio and video programs, and facsimile transmissions

Backward Linkages:
- computer/switching equipment manufacturers
- software developers
- suppliers of information transmission equipment (fibre optic and other cables, satellites, multiplexer equipment)
- construction trades and building materials suppliers
- market research firms and advertising agencies
- standard business services, such as legal and accounting services, office supply firms

Forward Linkages:
- all businesses
- institutions
- government agencies
- individual households

Key Features and Trends:
- very capital intensive industry
- high level of technological sophistication, and rapid technological change
- convergence of computer and telecommunication technologies
- increasing competition in the sector and reduced reliance on regulated monopolies
- services to corporate and public sector clients are concentrated close to the client and tend to be in larger urban areas
- the telecommunication industry has a greater proportion of clerical occupations as compared to the provincial average for all industries
- reduced reliance on human operators because of technological innovation

ANNEX B

List of Interview Contacts

Industry Interviews

Name	Affiliation	Industry
Gary Hendrick	Intergroup Advertising	Advertising services
Nithi Govindasami	Alberta Agriculture	Agricultural services
Paul Andre Chamberlain	Alberta Society of Software Developers	Computer services
Brault Kelpin	Systemhouse	Computer services
Peter Noden	Alberta Technology, Research, and Telecommunications	Computer services and telecommunications
Neil Taylor	Taylor Industrial Software	Computer services
Tom Snell	Columbia Institute	Educational services
Michael Cooney	Martech College of Marketing and Management	Educational services
Don Manuel	Training Group	Educational services
Lorne Mick	EnTrust	Environmental services (focus group)
Paul Johnson	UMA	Environmental services (focus group)
Harry Sambells	Kilborn Engineering	Environmental services (focus group)
Jeff Pallister	Pallister Resource Management	Environmental services (focus group)
Arnold Lamb	Stanley Industrial Consultants	Environmental services (focus group)
Joseph Wells	Pollution Control Technologies	Environmental services (focus group)
Jay Archer	David Bromley Engineering	Environmental services (focus group)
Cheryl Shea	Norwest Labs	Environmental services (focus group)
Jud Cheladyn	CSB Environmental Services	Environmental services (focus group)
Sandy Sutton	Alberta Special Waste Services Association	Environmental services (focus group)
Sherill Owen	Industry, Science, and Technology Canada	Environmental services (focus group)
Ed Clarke	Clarke Management Inc.	Financial services
Alan Lefever	Reynolds Mirth Richards & Farmer	Legal services
John Stephenson	Western Management Consultants	Management consulting
Gabe Shelley	Peat Marwick Stephenson and Kellogg	Management consulting
Don Herring	Canadian Association of Oilwell Contractors	Oilfield services
Roger Soucy	Petroleum Services Association	Oilfield services
Sylvan Norzorzut	Hardy BBT	Scientific/ technical services
Gary Stuart	Canspec Group (formerly Hanson Materials)	Scientific/ technical services

Peter Sagar	Industry, Science, and Technology Canada	Service sector
Roger Jackson	Alberta Economic Development and Trade	Small business/regional development
Beverly MacKeen	Alberta Career Development and Employment	Training issues
Shirley Woods-Cyr	Alberta Career Development and Employment	Training issues

ANNEX C

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